IETF-125

SRv6 for Redundancy Protection

draft-ietf-spring-sr-redundancy-protection-06

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History & State

Redundancy protection (Spring, DetNet)

- draft-ietf-spring-sr-redundancy-protection
  - Generalized protection mechanism defined to achieve high reliability of service transmission in Segment Routing networks.
  - A new SID (Redundancy SID, RSID) is defined, which points to the Redundancy functionality of the node. (Note: algorithms used by the Redundancy Functionality are not within the scope of the document.)
  - RSID related Redundancy Policy contains all the configuration, i.e., what is the service protection action (i.e., replication or elimination) and how the action is to be executed on packets belonging to a given flow using the protection service.
  - Appendix: for illustration, a complex topology scenario is described in detail.

- Covers a wider range of use-case scenarios and protection topologies (including DetNet scenarios).

Changes in the document

Update in draft-ietf-spring-sr-redundancy-protection-06

- Single editorial finetune
  - In section 4.1. "Redundancy Segment Endpoint Behavior":
  - The text has been made similar to RFC8986 format regarding processing the Upper-Layer header of a packet matching a FIB entry locally instantiated as an End.R SID.

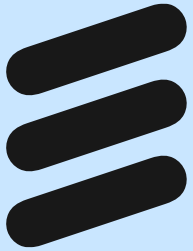
- Note:
  - Draft & terminology inline with DetNet architecture

skipping to change at *page 7, line 22*

```
   destination address matches a local IPv6 address instantiated as an
   SRv6 SID (S), and S is a Redundancy SID, N does:

   S01. When an SRH is processed {
   S02.   If (Segments Left != 0) {
   S03.    Send an ICMP Parameter Problem message to the Source Address
                with Code 0 (Erroneous header field encountered),
                and Pointer set to the Segments Left field,
                interrupt packet processing and discard the packet
   S04.   }
   S05.   Proceed to process the next header in the packet
   S06. }

   When processing the Upper-Layer header of a packet matching a FIB
   entry locally instantiated as an End.R SID, N does the following:

S01. If (Upper-Layer header type == ( 4(IPv4) OR 41(IPv6) OR 143(Ethernet) ) {
S02.   Extract the ARG part of the SID
S03.   Remove the outer IPv6 header with all its extension headers
S04.   Forward the exposed payload, type and the ARG part to the Redundancy
       functionality
S05. } Else {
S06.    Process as per Section 4.1.1 of RFC8986
S07. }
```

Next steps

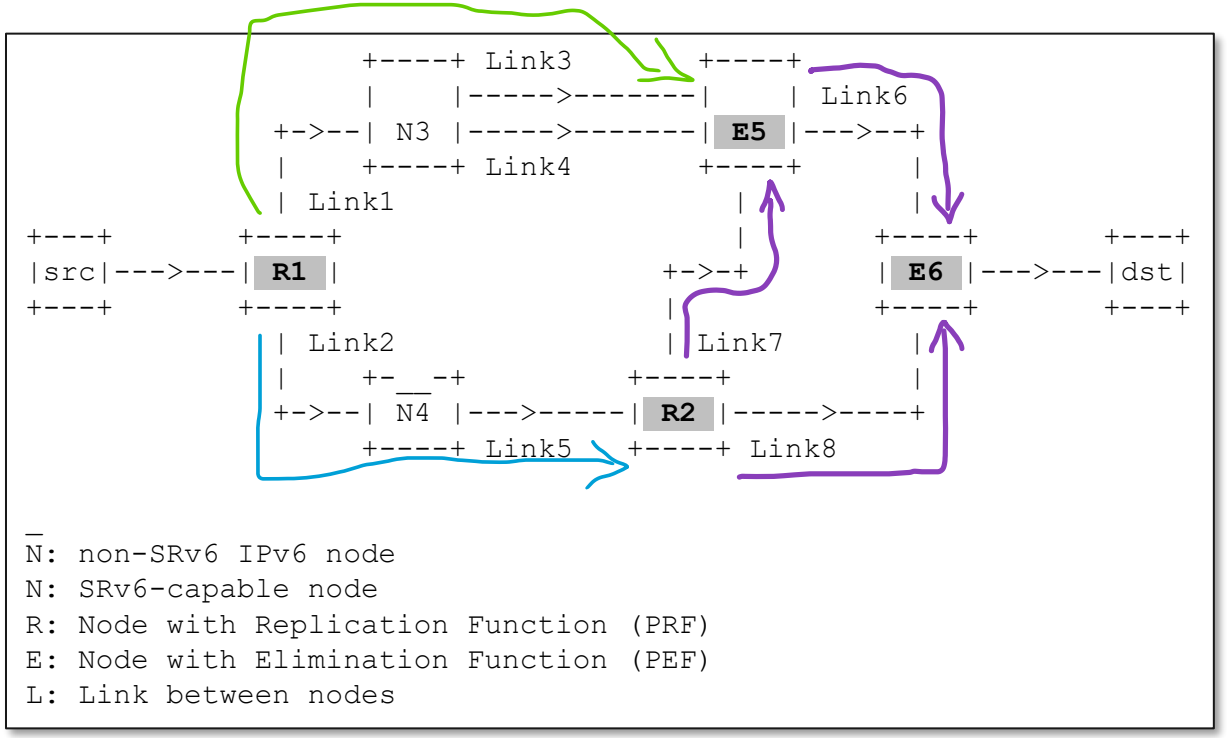
- Technical content is stable.
- Asking for WG last call.



Q & A

Appendix
Example

- The example topology is constructed to show the usage of RSID.
  - Mixture of
    - SRv6-capable nodes (N3, R1, R2, E5, E6)
    - Redundancy nodes (R1, R2, E5, E6)
    - IPv6 node that is not SRv6-capable (N4)
  - Describes the life-of-a-packet
    - Encapsulation + processing actions



- Note, that any of the links can be replaced with an SRv6 network segment.